

## 2 COMBINED MONITORING REPORT

In accordance with Title V Permit Standard Condition 1.F, BAAQMD Rule 8-34-411 and §60.757(f) in the NSPS, this report is a Combined Semi-Annual Title V Report and Partial 8-34 Annual Report that is required to be submitted by Ox Mountain Landfill. The report contains monitoring data for the operation of the landfill gas collection and control system (GCCS). The operational records have been reviewed and summarized. The timeframe covered by report is April 1, 2016 through September 30, 2016. The following table lists the rules and regulations that are required to be included in this Combined Report.

**TABLE 2-1 - COMBINED REPORT REQUIREMENTS**

Rule	Requirement	Location in Report
8-34-501.1 §60.757(f)(4)	All collection system downtime, including individual well shutdown times and the reason for the shutdown.	Section 2.1 , Appendices C & E
8-34-501.2 §60.757(f)(3)	All emission control system downtime and the reason for the shutdown.	Section 2.2, Appendix D
8-34-501.3, 8-34-507, §60.757(f)(1)	Continuous temperature for all operating flares and any enclosed combustor subject to Section 8-34-507.	Section 2.3, Appendix F
8-34-501.4, 8-34-505, 8-34-510	Monitoring and/or testing performed to satisfy any of the requirements of the rules.	Sections 2.4 & 3, Appendices G
8-34-501.6, 8-34-503, 8-34-506, §60.757(f)(5)	For operations subject to Section 8-34-503 and 8-34-506, records of all monitoring dates, leaks in excess of the limits in Section 8-34-301.2 or 8-34-303 that are discovered by the operator, including the location of the leak, leak concentration in parts per million by volume (ppmv), date of discovery, the action taken to repair the leak, date of the repair, date of any required re-monitoring, and the re-monitored concentration in ppmv.	Section 2.6 & 2.7, Appendices H& I
8-34-501.7	Annual waste acceptance rate and current amount of waste in-place.	Section 2.8
8-34-501.8	Records of the nature, location, amount, and date of deposition of non-degradable wastes, for any landfill areas excluded from the collection system requirement as documented in the GCCS Design Plan.	Section 2.9
8-34-501.9, 8-34-505, §60.757(f)(1)	For operations subject to Section 8-34-505, records of all monitoring dates and any excesses of the limits stated in Section 8-34-305 that are discovered by the operator, including well identification number, the measured excess, the action taken to repair the excess, and the date of repair. Allowed higher operating value (HOV) wells excluded from the limits are listed here as well.	Section 2.10, 2.10.1, 2.10.2, Appendices J & K
8-34-501.10, 8-34-508, §60.757(f)(1)	Continuous gas flow rate and temperature records for any site subject to Section 8-34-508.	Section 2.11, Appendices F and L
8-34-501.12	The records required above shall be made available and retained for a period of 5 years.	Section 1.2

Rule	Requirement	Location in Report
§60.757(f)(1)	Value and length of time for exceedance of parameters monitored per §60.756(a), (b), or (d).	Section 2.3
§60.757(f)(2)	Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.	Section 2.2.1
§60.757(f)(3)	Description and duration of all periods when control devices were not operating for more than 1 hour §60.756.	Section 2.2, Appendix D
§60.757(f)(4)	All periods when collection system was not operating for more than 5 days.	Section 2.1
§60.757(f)(5)	Location of each surface emission excess and all re-monitoring dates and concentration.	Section 2.6, Appendix H
§60.757(f)(6)	The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), (c)(4) of §60.755.	Section 2.12, Appendices B & C

## 2.1 Collection System Operation (BAAQMD 8-34-501.1 & §60.757(f)(4))

Appendix A contains a map of Ox Mountain's GCCS. Section 2.1.1 includes the GCCS downtime for the reporting period. The information contained in Appendix C includes the individual well start-up and shutdown times and the reason for the SSM events.

### 2.1.1 Collection System Downtime

During the period covered in this report, the GCCS was not shut down for more than five days on any one occasion. There were 26.75 hours of GCCS downtime for the reporting period of April 1, 2016 through September 30, 2016. The total downtime for 2016 was 26.75 hours out of an allowable 240 hours per year.

Appendix D contains the A-7, A-8, and A-9 Flares and the Ameresco Internal Combustion (IC) engines Downtime Reports which list dates, times, and lengths of shutdowns for the reporting period. Appendix E contains the GCCS Downtime.

### 2.1.2 Well Start-Up & Disconnection Log

There were 43 wellfield SSM events that occurred during the reporting period. A total of 14 wells were decommissioned and 14 wells were started-up, pursuant to BAAQMD Regulation 8-34-117. See Appendix C, Wellfield SSM Log for details.

## **2.2 Emission Control Device Downtime (BAAQMD 8-34-501.2 & §60.757(f)(3))**

The emission control system consists of three flares (A-7, A-8, and A-9), which all began operation in 2004 and the six IC Engines operated by Ameresco. The six IC Engines are under a separate permit and are reported by a third-party. The control system was not bypassed at any time during the reporting period. Raw LFG was not emitted during the reporting period. The SSM logs for the A-7, A-8, and A-9 Flares and the IC Engines are located in Appendix D.

### **2.2.1 LFG Bypass Operations (§60.757(f)(2))**

Title 40 CFR §60.757(f)(2) is not applicable at Ox Mountain because a bypass line has not been installed. LFG cannot be diverted from the control equipment.

## **2.3 Temperature Monitoring Results (BAAQMD 8-34-501.3, 8-34-507, & §60.757(f)(1))**

The combustion zone temperatures of the flares are monitored with Thermo-Electric Thermocouples. The temperature is displayed with a Yokogawa digital recorder, which is downloaded and archived. During the reporting period, there was one temperature deviation of the A-9 Flare. A deviation from permit Condition Number 10164, Part 23, Subpart c occurred on March 21, 2016. The three -hour average temperature limit for the A-9 Flare deviated from approximately 17:35 until 19:17 on March 21, 2016. Cornerstone, on behalf of Republic, submitted to the BAAQMD a 10-Day and 30-Day Title V Report on April 21, 2016 after first discovering this deviation on April 14, 2016. Ox Mountain received Notice of Violation (NOV) number A56503 on August 4, 2016 for not reporting a permit deviation within 96 hours from which it occurred, as required by BAAQMD Regulation 1, Rule 523, Section 3. In response to this NOV, Cornerstone, on behalf of Republic, submitted a combined 10-Day Response to NOV number A56503 and 10-Day and 30-Day Title V Report to the BAAQMD on August 11, 2016.

Appendix F contains the Flare Flow and Temperature Deviation/ Inoperative Monitor/ Missing Data Reports for April 1, 2016 through September 30, 2016.

## **2.4 Monthly Cover Integrity Monitoring(BAAQMD 8-34-501.4)**

The cover integrity monitoring was performed on the following dates:

- April 25, 2016;
- May 27, 2016;
- June 27, 2016;

- July 26, 2016;
- August 30, 2016; and
- September 20, 2016.

The Monthly Cover Integrity Monitoring Logs are included in Appendix G.

## **2.5 Less Than Continuous Operation (BAAQMD 8-34-404 and 8-34-501.5)**

Ox Mountain does not operate under BAAQMD Regulation 8-34-404 (Less Than Continuous Operation (LTCO)) and therefore, is not required to submit monthly LFG flow rates for LTCO wells.

On October 22, 2015, Ox Mountain submitted a request to the BAAQMD for approval to operate the following wells under Regulation 8-34-404: LTS-1, LTS-2, LTS-3, LTS-4, LTS-5, LTS-6, LTS-7, LTS-8, LTS-9, LTS-10, LTS-11, and LTS-12. The BAAQMD responded to this request on May 6, 2016 by providing language to the current Title V Permit that the aforementioned wells may operate under LTCO. Cornerstone, on behalf of Republic, responded to the BAAQMD on May 24, 2016 that the provided language was acceptable. Republic received the updated Title V Permit from the BAAQMD on October 14, 2016 containing Permit Condition 10164 Part 18(d)(i) which allows the aforementioned wells to operate less than continuously.

## **2.6 Surface Emissions Monitoring (BAAQMD 8-34-501.6, 8-34-506, §60.757(f)(5) & California Code of Regulations (CCR) §95469(a))**

The Second and Third Quarter 2016 Instantaneous and Integrated Surface Emissions Monitoring (SEM) events were completed by a third-party. Refer to the Second and Third Quarter 2016 SEM Reports, located in Appendix H, for detailed results.

## **2.7 Component Leak Testing (BAAQMD 8-34-501.6 & 8-34-503, CCR §95465(b)(1)(B))**

Quarterly component leak testing, pursuant to BAAQMD Regulation 8-34-301.2 and California Air Resources Board (CARB) §95465(b)(1)(B), occurred during the reporting period on the following dates:

- Second Quarter 2016 – April 7, and June 13, 2016; and
- Third Quarter 2016 – August 16 and 31, 2016.

No exceedances were detected. Refer to the Quarterly LFG Component Leak Monitoring Logs, located in Appendix I, for detailed results.



## **2.8 Waste Acceptance Records (BAAQMD 8-34-501.7)**

The amount of waste accepted during the reporting period of April 1, 2016 through September 30, 2016 was approximately 282,247.21 tons. The current Waste-In-Place as of September 30, 2016 is approximately 23,679,567.3 tons.

The BAAQMD approved an increase of the current waste limit up to 26.5 million tons.

## **2.9 Non-Degradable Waste Acceptance Records (BAAQMD 8-34-501.8)**

The GCCS Design Plan for Ox Mountain does not indicate non-degradable waste areas that are excluded from the collection system. Therefore, BAAQMD Regulation 8-34-501.8 is not applicable.

## **2.10 Wellhead Monitoring Data (BAAQMD 8-34-501.4 & 8-34-505)**

Wellhead monitoring was performed on a monthly basis pursuant to 8-34-505. The well readings for April 1, 2016 through September 30, 2016 are included in Appendix J. Each well was monitored in accordance with the following requirements:

- 8-34-305.1 – Each wellhead shall operate under a vacuum;
- 8-34-305.2 – The LFG temperature in each wellhead shall be less than 55 degrees Celsius (°C) (131 degrees Fahrenheit [°F]); and
- 8-34-305.4 – The oxygen concentration in each wellhead shall be less than 5 percent by volume.

Wellhead monitoring was performed on the following dates:

- April 4, 8, 12, 18, 19, and 25, 2016;
- May 2, 3, 9, 10, 16, 24, and 27, 2016;
- June 6, 7, 13, 20, 21, and 27, 2016;
- July 5, 7, 11, 12, 19, 25, and 26, 2016;
- August 4, 8, 9, 16, 22, 23, 29, and 30, 2016; and
- September 6, 12, 13, 19, and 20, 2016.

### **2.10.1 Wellhead Deviations (BAAQMD 8-34-501.9 & §60.757(f)(1))**

There were 53 wells with readings that exceeded the limits set forth in BAAQMD Regulation 8-34-305 during the reporting period. Corrective action was initiated within the required 5-day time period and re-monitoring was completed within 15 days of the

deviation pursuant to BAAQMD Regulation 8-34-414. See Appendix K, Wellfield Deviation Log, for further details.

### **2.10.2 Higher Operating Value (HOV) Wells**

As of September 30, 2016, the following wells in Sections 2.10.2.1 and 2.10.2.2 are approved to operate at a HOV:

#### **2.10.2.1 Oxygen HOV Wells**

Pursuant to Permit Condition 10164, Part 18(b)(i), the oxygen concentration limit does not apply to the well listed, provided that the oxygen concentration in the LFG at the main header does not exceed fifteen percent oxygen by volume (dry basis). The applicable well is: HC-F06.

#### **2.10.2.2 Oxygen and Pressure HOV Wells**

Pursuant to the notification and request for HOVs sent to the BAAQMD on November 3, 2015, the oxygen concentration limit does not apply to the wells listed below, provided that the oxygen concentration in the LFG at the main header does not exceed 15 percent oxygen by volume (dry basis). The BAAQMD responded to this request on May 6, 2016 by providing language to the current Title V Permit that the following wells may operate under LTCO. Cornerstone, on behalf of Republic, responded to the BAAQMD on May 24, 2016 that the provided language was acceptable. The BAAQMD issued a revised Title V permit on September 22, 2016 approving the HOV wells. Pursuant to Permit Condition 10164 Part 18(d)(iii), the oxygen concentration limit does not apply to the wells listed, provided that the oxygen concentration in the LFG at the main header does not exceed 15 percent oxygen by volume (dry basis). The wells to which these HOV values apply are as follows: LTS-1, LTS-2, LTS-3, LTS-4, LTS-5, LTS-6, LTS-7, LTS-8, LTS-9, LTS-10, LTS-11, and LTS-12.

### **2.11 Gas Flow and Temperature Monitoring Results (BAAQMD 8-34-501.10, 8-34-508, & §60.757(f)(1))**

The LFG flow rate is measured with a flow meter. The General Electric data panel displays the LFG flow and the digital Yokogawa data recorder records LFG flow every minute and is downloaded and saved to a compact flash card. The flow meter at each flare meets the requirements of BAAQMD Regulation 8-34-508 by recording data at least every 15 minutes. The flow meter is maintained and calibrated pursuant to manufacturer's recommendations. The flow data for each flare is available for review at Ox Mountain.

Appendix L contains a summary of the monthly LFG flow rates for the flares. Appendix F contains the Flare Flow and Temperature Deviation/ Inoperative Monitor/ Missing Data

Report for April 1, 2016 through September 30, 2016. There were no issues during the reporting period.

## **2.12 Compliance with §60.757(f)(6)**

*"The date of installation and the location of each well or collection system expansion added pursuant to (a)(3), (b), (c)(4) of §60.755."*

The GCCS was improved pursuant to Title V Permit Number A2266 during the reporting period.

A total of 14 wells were started up, and 14 wells were decommissioned during the reporting period pursuant to Permit Condition 10164, Part 17b(i). Well Decommissioning and Startup Notification Letters that were prepared by Cornerstone on behalf of Republic and submitted to the BAAQMD are included in Appendix B.

As of September 30, 2016, Permit Condition 10164, Part 17b(i) still allows for the replacement of an unlimited number of vertical wells, installation of up to 9 new vertical wells, installation of up to 18 new horizontal collectors, the decommissioning of up to 28 vertical wells, and the decommissioning of up to 9 horizontal collectors.

As of September 30, 2016 Ox Mountain consists of 166 vertical wells, 9 horizontal collectors, 2 leachate collection riser, and 12 trench collectors.

## **2.13 Compliance with Title V Permit Condition Number 10164, Part 5**

The unpaved segment of road extending from the end of the paved haul road to the working face does not exceed the 1,200 foot length limit.

## **2.14 Compliance with Title V Permit Condition Number 10164, Part 6**

Republic has confirmed that no vehicles exceeded the 10 mile per hour speed limit on the unpaved roads.

## **2.15 Compliance with Title V Permit Condition Number 10164, Part 7**

Republic has confirmed that all unpaved roads (excluding limited use access roads) were treated with 10 percent magnesium chloride dust suppressant solution at a rate of at least once per calendar month. From April 1, 2016 through September 30, 2016, dust suppressant was applied after any dry period consisting of 30 consecutive days with less than 0.09 inches of rain per day. In addition, water was applied to all unpaved roads at least 4 times per working day. The watering schedule was reduced during periods of sufficient precipitation to minimize dust emissions. These records are maintained at Ox Mountain and are available upon request.

## **2.16 Compliance with Title V Permit Condition Number 10164, Part 8**

Republic has confirmed that all paved roadways were swept and washed down at least twice per week or as necessary to maintain a clean road surface.

## **2.17 Compliance with Title V Permit Condition Number 10164, Part 9**

On-site vehicle traffic volume did not exceed the number of round trips described in Table 2-3 during any one day:

**TABLE 2-2 - ON-SITE VEHICLE TRAFFIC VOLUME**

<b>Vehicle Type</b>	<b>Daily Round Trip Limits</b>
Transfer Trucks	178
Packer Trucks	52
Water Trucks	36
Soil Trucks	200
Misc. Heavy Duty Equipment	60
Light Duty Vehicles	250

## **2.18 Compliance with Title V Permit Condition Number 10164, Part 10**

Except for the vehicles listed in Table 24, the on-site one way distance traveled by any heavy-duty vehicle (on paved roads only) did not exceed 8,000 feet. This limitation does not apply to the vehicles listed in Table 2-4, which may travel up to a maximum of 11,700 feet (one-way distance) on paved roads:

**TABLE 2-3 - VEHICLE TRAFFIC**

Vehicle Type	Daily Round Trip Limits
Water Truck	36
Fuel Trucks	2
Employee - Light Duty Equipment	20

### **2.19 Compliance with Title V Permit Condition Number 10164, Part 13**

No contaminated soil containing volatile organic compound (VOC) concentrations greater than 50 parts per million by volume (ppmv) was received during this reporting period. VOC-laden soil (containing less than 50 ppmv of VOCs) was received during this reporting period. The total VOC-laden soil placed did not exceed the 118.75 ton daily limit or the 31,800 ton yearly limit.

### **2.20 Compliance with Title V Permit Condition Number 16315 for S-12 Stockpile or Green Waste**

Appendix O contains monthly and 12-month rolling records of the amount of yard and green waste received for this reporting period. These records are maintained at Ox Mountain and are available upon request.

### **2.21 Compliance with Title V Permit Condition Number 26216 and 25107 for S-5 Non-Retail Gasoline Dispensing Facility G#8524**

Pursuant to Title V Permit Condition Number 26216 and Regulation 2-5, the facility's annual gasoline throughput did not exceed the 940,000 gallon (gal) limit in any consecutive 12-month period. Monthly gasoline throughput totals for the reporting period are included in Appendix P. These records are maintained at Ox Mountain and are available upon request.

Pursuant to Title V Permit Condition Number 25107, the Static Pressure Performance Test (Leak Test) for ST-38 was performed on October 30, 2015. The Static Pressure Performance Test results are included in Appendix P.

### **2.22 Compliance with Draft Title V Permit Condition Number 10164, Part 20**

Pursuant to Title V Permit Condition Number 10164 Part 20, the facility's combined landfill gas flow rate to the flares (A-7, A-8, and A-9) did not exceed 2,155,000,000 scf corrected to 50 percent methane (dry basis, 70°F, 1 atmosphere [atm]) in any consecutive 12-month

period. Monthly combined landfill gas flow rates to the flares for the reporting period are included in Appendix L. These records are maintained at Ox Mountain and are available upon request.

### **2.23 Compliance with Draft Title V Permit Condition Number 10164, Part 21**

Pursuant to Title V Permit Condition Number 10164 Part 21, the facility's total reduced sulfur (TRS) compounds in the collected landfill did not exceed 265 ppmv as hydrogen sulfide ( $H_2S$ ) averaged over any consecutive rolling 12-month period. Monthly 12-month rolling averages of TRS as  $H_2S$  for the reporting period are included in Appendix Q. These records are maintained at Ox Mountain and are available upon request.

### **2.24 Compliance with Draft Title V Permit Condition Number 10164, Part 22**

Pursuant to Title V Permit Condition Number 10164 Part 22, the facility's annual average LFG generation did not exceed 6,600 scfm. Also pursuant to Part 22, fugitive annual average LFG emissions rates, assumed to comprise 25 percent by volume of the LFG generation rate, did not exceed 1,650 scfm. Twelve-month rolling LFG generation rates are included in Appendix L.

Pursuant to Title V Permit Condition Number 10164 Part 22, toxic air contaminant (TAC) emissions from waste decomposition (S-1) will be determined from the annual LFG characterization analysis (Source Test) to determine compliance with the emission rate limits listed in Part 22(b). The results of the report noted that Flares A-7, A-8, and A-9 were operating within permitted limits. The 2016 Source Test was performed on September 13, 2016 and is included in Appendix N.

## **4 START-UP, SHUTDOWN, MALFUNCTION (SSM) PLAN**

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### **4.1 SSM Log for the GCCS at Ox Mountain**

The NESHAP contained in 40 CFR Part 63, AAAA for MSW landfills include the regulatory requirements for submittal of a semi-annual report (under 40 CFR §63.10(d)(5) of the general provisions) if an SSM event occurred during the reporting period. The reports required by §63.1980(a) of the NESHAP and §60.757(f) of the NSPS summarize the GCCS exceedances. These two semi-annual reports contain similar information and have been combined as allowed by §63.10(d)(5)(i) of the General Provisions.

NESHAP 40 CFR part 63, AAAA became effective on January 16, 2004. Those SSM events that occurred during the NSPS semi-annual reporting period are reported in this section (April 1, 2016 through September 30, 2016). The following information is included as required:

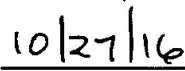
- During the reporting period, there were 20 SSM events at the A-7 Flare. Additional details are available in the SSM log for the A-7 Flare located in Appendix D, Flare SSM Log.
- During the reporting period, 10 SSM events occurred at the A-8 Flare. The A-8 Flare was shut down and restarted during the reporting period due to the reasons noted in Appendix D, Flare SSM Log.
- During the reporting period, 69 SSM events occurred at the A-9 Flare. The A-9 Flare was shut down and restarted during the reporting period due to the reasons noted in Appendix D, Flare SSM Log.
- During the reporting period, 43 SSM events occurred in the wellfield . Details are included in Appendix C, Well SSM Log.
- There were 142 events in total. In all 142 events, automatic systems and operator actions were consistent with the standard operating procedures contained in the SSM Plan. There were no deviations from the SSM plan.
- There were no identified exceedances during the reporting period over any applicable emission limitation in the landfills NESHAP (§63.10(d)(5)(i)).
- Revisions of the SSM Plan to correct deficiencies in the landfill operations or procedures were neither required, nor prepared (§63.6(e)).

***I certify the following:***

***Based on information and belief formed after reasonable inquiry, information on the startup, shutdown, malfunction forms, all accompanying reports, and other required certifications are true, accurate, and complete.***



**Signature of Responsible Official**



**Date**

**Bill Rich**

**Name of Responsible Official**